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BÉLA J. DEMETER

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American Association of Zoo Keepers

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Hand-raising Hoofed Animals: Part II

By Steve Taylor, Los Angeles Zoo

HAND-RAISING DIFFERENT SPECIES OF ARTIODACTYLA

In different zoos throughout the world much imagination and variation has led to interesting results in hand-raising hoofed animals. This section will cover some of the more unique methods of hand-raising the different species of Artiodactyla. This section is by no means complete, but it is written to give the reader an idea of methods used in the past. For easy reference the following section is divided phylogenetically under families.

Family Suidae. Old World Pigs

Fradrich (1966) gave an interesting account of hand-raising warthogs (*Phacochoerus aethiopicus*) at the Hanover Zoo. Two of the six litter mates were removed to be hand-raised since sows possess only four teats. The diet of the hand-raised piglets consisted basically of whole powdered milk, commercial milk powder available for rearing piglets, powdered skim milk, vitamins and water. Fradrich noted that after three months of age the two hand-raised animals were larger and heavier than the ones the sow raised.

Family Tayassuidae. Peccaries

Little has been reported regarding hand-raising either species of peccary in captivity. A few years ago the Los Angeles Zoo raised two collared peccaries (*Tayassu tayacu*) on whole cow's milk. Having never accepted a bottle, these two piglets drank only from a bowl.

Family Hippopotamidae. Hippopotamuses

Hippopotamuses have occasionally been hand-raised. Crandall (1964: 539) reported that twin hippopotamuses (*Hippopotamus amphibius*) were born in April 1963 at the St. Louis Zoo. At five weeks old one of the twins (male) had to be separated because it was lagging the other baby (female) in growth. The young male was fed a diet of reconstituted evaporated milk, pablum, diced vegetables, and greens. By June of that year, it was reported doing as well as the young female which was still nursing the cow.

Weber (1970) reported that baby hippopotamuses must have shallow water available to bathe. This water stimulates defecation and urination besides being essential for good skin condition. In February 1969 a hippopotamus was born at the Melbourne Zoo. Because the female had had three previous unsuccessful attempts at rearing young, the newborn was removed for hand-raising. Weber reported that this young hippopotamus refused a bottle, but would suck on a zoo attendant's finger. When the attendant immersed her hand in a bowl containing formula, the young hippopotamus continued to suck the attendant's fingers and was finally induced to drink from a bowl in that manner. The formula consisted of 397 grams of calf feed preparation and 12 eggs mixed in a blender with 3.5 pints of sterile water.

Stroman and Slaughter (1972) reported hand-raising a pigmy hippopotamus (*Choeropsis liberiensis*) born premature in February 1964. At birth it weighed 3.3 kg or one-half of the normal birth weight. The formula used to raise this young hippopotamus contained one cup calf feed, one cup evaporated milk, one cup water, one banana, one apple, and a handful of greens mixed in a blender until it had the appearance of cooked oatmeal. This young hippopotamus also refused a bottle and was induced to drink from a bowl in the same manner that Weber described.

Family Camelidae. Camels

A bactrian camel (*Camelus bactrianus*) born May 1966 at the Krefeld Zoo (Encke, 1970) was abandoned by its mother at birth and hand-raised by the zoo staff on a diet of fat enriched cow's milk and supplementary vitamin E. Three arabian camels (*Camelus dromedarius*) have been successfully hand-raised at the Los Angeles Zoo in the last three years. These young camels were raised on whole cow's milk and supplementary vitamins. Milk analysis reveals that the arabian camel does not need the fat enriched milk that is required by young bactrian camels (Lyall-Watson, 1962).

Dolensek (1972) reported that a guanaco (*Lama guanicoe*) was born at the Bronx Zoo weighing only one half (340 g) of the normal birth weight. Because of its apparent weakness and poor control of limbs, it failed to nurse and had to be removed to the zoo nursery and fed through a stomach tube. After gaining some strength the young guanaco was fed from a bottle containing whole cow's milk enriched with egg yolk.

Family Tragulidae Chevrotains

Only one mention of hand-raising chevrotains is to be found in the literature. Lyall-Watson (1962) in her survey mentioned that David K. Jordt, then living in Liberia, hand-raised chevrotains on a formula of equal parts Carnation Milk and water. Jordt noted that these animals tended to over-eat.

Family Cervidae. Deer

Crandall (1964) stated that fawns are easily hand-raised on whole cow's milk or reconstituted evaporated milk. Other formulas have now been suggested as it appears whole cow's milk can create a diarrhea problem. Pinter (1962) hand-raised roe deer (*Capreolus caprolus*) on a mixture of two parts cow's milk to one part water. He found that adding some oatmeal to this mixture had a settling effect on digestion as well as adding some nutritive value to the formula. At Norfolk Wildlife Park (Wayne, 1967) they had better success with hand-raised roe deer using a milk substitute called Ostermilk (Glaxo Laboratories, Inc.) than when they used cow's milk. The Los Angeles Zoo has raised axis deer (*Axis axis*) on a formula composed of one part Spf-lac (Bordon Chemical, Borden, Inc) and one part goat's milk.

Behavior of hand-raised fallow deer (*Dama dama*) has been studied by Klopher and Klopher (1962). They showed that habituation to human company seemed to occur in three stages. For the first 12 to 36 hours the fawn would lie quietly, but be alert. At the sound of a loud noise the fawn would flatten its neck and head on the floor and remain motionless even if lifted. After 12 to 36 hours the fawn would begin calling loudly and wander about its stall. During this second stage, the fawn lost its previous timid behavior towards humans. Thirdly, after three or four days, the fawn would rest calmly between feedings. When the foster-mother entered the stall the fawn would follow her around until milk was provided.

Hand-raised deer do not seem to develop as rapidly during the first few weeks as deer maturing under natural conditions (Pinter, 1962). However, after one year the deer Pinter hand-raised weighed the same, if not more, than the ones raised naturally.

Family Giraffidae. Giraffe and Okapi

After a series of unsuccessful attempts at rearing okapi (*Okapia johnstoni*) at the Antwerp Zoo, one was born in April 1959 and removed from the female to be reared by the zoo staff (Crandall, 1964). At first it was fed donkey's milk diluted with water, but sheep's milk was later substituted. After five months the young okapi began eating solid foods; subsequently it was weaned.

Several zoos have attempted to hand-raise giraffe (*Giraffe camelopardalis*), but with little success. At the Columbus Zoo (Savoy, 1966) a giraffe calf was raised after three previous unsuccessful attempts. The main diet consisted of a canned milk preparation called Olac (Mead-Johnson) which resembled the constituents of giraffe milk. Zeller (1960) reported the hand-raising of a giraffe calf at the Bristol Zoo on a diet of whole cow's milk, rice flour, groats, honey, salt, and various vitamins. Zoo personnel have found a ladder essential for this unique hand-raising task.

Family Antilocapridae. Pronghorn

Most of the herds of pronghorns (*Antilocapra americana*) now in captivity have been formed from captive reared, hand-raised animals (Crandall, 1964). To restock

pronghorns into Tucson Mountain Park, Nichol (1942) reared seven pronghorn fawns. The formula he used for the young antelopes consisted of six parts evaporated milk, ten parts lime water saturated solution, and one part Karo syrup. Six pronghorns were hand-raised at the Roeding Park Zoo in Fresno, California on fresh pasteurized goat's milk (Lyall-Watson, 1962).

Family Bovidae. Cattle, Antelope, Goat, and Sheep.

Some bovids, being nervous and notoriously excitable, are extremely difficult to hand-raise. Duikers (subfamily, Cephalophinae), dik-diks, and other small antelopes (tribe, Neotragini) are usually shy and retiring. Blackbucks (*Antelope cervicapra*) are difficult to approach at first, but later adjust to a bottle quite easily (Lentz, 1969). The Los Angeles Zoo has had an extremely difficult time hand-raising excitable young springboks (*Antidorcas marsupialis*).

Other bovids are calm and easily hand-raised. Lentz (1969) kept a docile male nyala antelope (*Tragelaphus angasi*) in the nursery of the Oklahoma City Zoo because it seemed to have a calming influence on the other nursery residents.

After one year this male nyala was removed from the nursery because its eagerness for a bottle became a nuisance when attempts were made to feed the other animals.

The Staff of the Alberta Game Farm (Oeming, 1969) has hand-raised bighorn sheep (*Ovis canadensis*), white sheep (*Ovis dalli*), and musk ox (*Ovibos moschatus*) on a diet of one part evaporated milk (7.8% butterfat) and two parts water with five drops of multi-purpose vitamins. In every case these offspring were larger than the ones raised on condensed or cow's milk. The staff of the Lincoln Park Zoo (Rosenthal and Meritt, 1971) reared Grant's gazelle (*Gasella granti*) and Thompson's gazelle (*Gazella thomsonii*) on a formula similar to the one used by Oeming to raise sheep and oxen.

In February 1972 the Los Angeles Zoo began using a formula consisting of one part Spf-lac (Borden Chemical, Borden, Inc.) and one part goats milk for hand-raising Bovids. Between February 1972 and January 1973 the zoo staff hand-raised one blesbok (*Damaliscus dorcas*), five scimitar-horned oryx (*Oryx tao*), three springbok (*Antidorcas marsupialis*), two sable antelope (*Hippotragus niger*), one mouflon sheep (*Ovis musimon*), three greater kudu (*Tragelaphus strepsiceros*), and various deer on this formula. Several of the young scimitar-horned oryx were reluctant to accept a bottle, but started nibbling alfalfa hay and Purina calf startena (Ralston Purina Co.) only a few days after birth. An oryx that was born in November 1972 was completely weaned after only 14 days.

Correction - AAZV Dates

The 1974 AAZV dates for their Annual Conference was reported to be October 14-16. The correct dates are November 3-7, 1974, in Atlanta, Ga.

SUMMARY

When a female hoofed animal cannot or will not suckle her young, a substitute milk must be found or the young animal will die. Because it is not uncommon for a female animal to reject her young, the zoo staff must be prepared to hand-raise these animals. Milk analysis charts help zoo veterinarians find a replacement formula for a particular species. Because the milk analysis charts are still incomplete, researchers must continue to gather information on the composition of milk for exotic species.

Commercial available canned and powdered milks seem to give the best results when used to hand-raise young hoofed animals. These replacement milks are accompanied with a guaranteed composition analysis and a list of ingredients including vitamins and minerals. Many commercial replacer milks are specific pathogen free. Canned milks do not have to be refrigerated until opening. Because they are vacuum sealed, contamination is not likely. Stored on the shelf, these milks become readily available when needed. Although commercial replacement milks can be considered the basic part of a formula, additives such as a banana, oatmeal, greens, additional vitamins, Karo syrup, and calf starter should be considered. Mammalian milks vary considerably in nutritional composition, palatability, water content, and smell. Every animal hand-raised must be considered a unique individual. They are not all alike.

Many authorities ascertain that hoofed animals should be hand-raised only when it is necessary for survival. However, some zoo personnel insist that there is a definite advantage in hand-raising hoofed animals which are destined to be transported to another zoo. Adequate replacer milks can be used successfully, but nothing can actually replace mother's milk as a consistently well-balanced diet. The growth rate of hand-raised hoofed animals during their first few weeks of life usually lags behind the growth rate of naturally reared animals. After some time most hand-raised hoofed animals do catch and even pass naturally reared ones in size and weight. Before weaning most hand-raised hoofed animals are docile, manageable, and seldom take flight from their foster-mothers. This can be a big advantage when transporting young hoofed animals. The danger of the animals becoming frightened and subsequently injured is lessened. This docile behavior, noted especially in buck deer, slowly changes from the time the young buck fawn is weaned until his first rutting season. After the first rutting, hand-raised bucks become extremely aggressive towards humans. Crandall (1964) noted that ranchers often make engaging pets of young pronghorn antelopes (*Antilocapra americana*). As adults, these animals become very stubborn and unruly. It is very advantageous to transport young hand-raised hoofed animals upon weaning, or shortly thereafter to prevent injury to both animal and human transporters. As more time elapses after weaning, the more difficult and less manageable the animal will become.

A behavioral study on adult hand-raised hoofed animals is badly needed. In-

formation on this subject is practically void in the literature. A study on the behavior of one integrated herd of hand-raised and naturally raised hoofed animals would be of value in understanding behavior of hand-raised hoofed animals. Behavioral patterns might be discovered which separate the hand-raised animals from the naturally reared ones. Hand-raising cannot be considered a complete success unless the animal raised matures normally and is not adversely affected by its artificial rearing.

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TOOL--USING COCKATOO - by Ken Kawata

Three Greater Sulphur-crested Cockatoos, *Kakatoe galerita*, are kept in a mixed exhibit with 10 Amazon Parrots of six species at the Indianapolis Zoo. Two of the cockatoos arrived in September, 1964, and the other in February, 1972. During warm months they are displayed in an outdoor enclosure, while in winter we house them in off-exhibit, heated quarters. Two of the cockatoos have "paired off" for quite some time and have been seen together. During the summer of 1973 when all these birds were outdoors, the two cockatoos were consistently seen digging tunnels in the corners of the dirt floor of the cage as if they were attempting to escape.

On 29 October, 1973, these psittacines were moved into relatively dim-lit winter quarters, ten feet wide, seven feet deep and seven feet high in size. Sand and gravel are used as floor materials.

On 17 January, 1974, while Keeper Robert Newell was cleaning the cage he saw two cockatoos busily engaged in some kind of activity in the left rear corner. One was using what appeared to be a flat stone, approximately one inch by one and a half inches. Holding the stone by the flat surfaces, it scraped away the earth from a spot where the wall meets the floor. Other keepers and myself also observed this behavior on several occasions and the bird was seen using different shapes of stones.

This leads us to guess that the birds seen digging indoors are the same two that exhibited this behavior pattern outdoors in the summer of 1973. I am not sure whether the digging was actually aimed at escape or just the moving aside of already loosened dirt as an occupational activity. At any rate, it seems apparent that the cockatoo was using this implement for a specific reason.



Urraca Jay Breeding Behavior

by Chris LaRue, Topeka Zoo

1/1 Urraca Jays, *Cyanocorax chrysops*, shared unit with 1/1 Fairy Bluebirds, *Irena peulla*.

OCTOBER 13

1/0 Fairy Bluebird found dead, apparently pecked to death by Urraca Jays.

OCTOBER 16

Urraca Jay egg found broken and eaten in unit (1st egg, first clutch). The Urraca Jays appeared to be attempting to make a nest in a feed pan which contained pidgeon chow and myna bird chow. Nesting material was put in this pan and some nesting activity was observed.

Breeding behavior (attempted copulation) was observed shortly after nesting material was put in. 0/1 Fairy Bluebird was removed from unit.

OCTOBER 17

Nest box was put in unit with nesting material. There was much activity around the nest box but most of the nesting material was thrown out of the box.

OCTOBER 20

More nesting material put into nest box.

OCTOBER 21

Domestic chicken egg put in nest box. This egg was immediately broken and eaten.

OCTOBER 27

1st egg, second clutch found.

8:30 a.m.

The female was observed sitting in the feed pan. She was not disturbed.

10:00 a.m.

The egg was found abandoned in the feed pan. It was collected and measured. Weight 9.05 grams. Length 33 mm. The egg was incubated at 99 F.

Pidgeon chow was put in the nest box.

OCTOBER 28

2nd egg, second clutch found.

8:00 a.m.

There was no egg visible in the unit.

9:30 a.m.

The remains of a broken egg were found on the floor under the nest box.

OCTOBER 29

3rd egg, second clutch found.

11:59 a.m.

Female sitting on feed pan. As I approached, the male appeared to threaten me.

12:08 p.m.

Male was perched about 2½ feet away from female. Male flew

to lower perch and caught a fly. He then flew to female and gave a soft, low vocal sound. The female responded by accepting the food. Male flew to higher perch.

12:16 p.m. Male flew to lower perch then returned. Female still sitting in pan.

12:20 p.m. Male flew to lower perch, hopped around and then approached me. Returned to high perch in about one minute.

12:27 p.m. Male flew to lower perch and hopped around, watches me.

12:28 p.m. Female leaves pan. Egg is visible, female flies away.

12:29 p.m. Male approaches pan. Egg was collected immediately. Weight 9 grams. Length 32mm. Incubated at 99 F.

OCTOBER 30 4th egg, second clutch.
No egg laying activity during morning. No egg at 2:30 p.m. Egg was found in feed pan at 4:40 p.m. Placed in incubator at 99 F.

NOVEMBER 2 1st egg, third clutch
Egg found at 8:15 a.m. in feed pan. Egg was collected and measured. Weight 8.97 grams. Length 33 mm. Both birds seemed very protective. Egg was returned to feed pan. Egg has been moved around feed pan several times during day. However, it has not been harmed.

NOVEMBER 8 2nd egg, third clutch. Egg found in feed pan at 8:15 a.m. Left in unit.

NOVEMBER 9 3rd egg, third clutch. Egg found in feed pan at 8:30 a.m. Left in unit. Female observed brooding eggs briefly in morning.

NOVEMBER 10 Female observed brooding eggs but leaves nest as soon as someone enters service area.

NOVEMBER 11 Female brooding eggs. Female getting very protective.

NOVEMBER 12 Female observed closely, sitting in nest but was not on eggs.

NOVEMBER 13 Female observed sitting on one egg. It was decided the feed pan was an inadequate nest for two reasons. First, the pan was too wide to allow the female to sit on all three eggs at once. Secondly, the pan was too shallow to contain the chicks if any hatched. A new nest was constructed and placed in the feed pan and the eggs were placed in the new nest. Female was observed brooding eggs 15 minutes after new nest was put in unit.

NOVEMBER 14 2 eggs in incubator appear to have stopped developing.

NOVEMBER 21 One egg in nest (from 3rd clutch) found broken.

NOVEMBER 25 Canceled 2 eggs in nest both appear well developed.

NOVEMBER 26 One egg missing from nest. Leaves one.

NOVEMBER 30 Last egg in nest missing.

DECEMBER 3 Eggs of 2nd clutch removed from incubator. All three were fertile, two were slightly developed embryos. Third egg contained fully developed chick, but was dead.



Keeper Activities

By Pat Stout, Brookfield Zoo

What activities are you or your local chapter involved with? The possibilities for interesting and worthwhile activities are virtually limited only by your imagination and enthusiasm. Some examples may be drawn from the wide variety of activities that the Keepers at Brookfield Zoo have been engaged in during recent years. Many, but by no means all, of these activities have been centered around the Brookfield Chapter of A.A.Z.K. Each month our chapter holds a meeting during which any business is discussed and usually a Guest Speaker is present to talk on topics of interest to Keepers. Our chapter has worked out a Speaker Program arrangement with management, which gives members of our chapter an opportunity to go to school groups and other groups to talk about a variety of animal topics and about Zoo Keeping as a career. In cooperation with Lincoln Park, members of our chapter have served as editors of The Keeper magazine for over a year. Also our chapter has taken part in a number of Ecology projects and is presently working with Lincoln Park and Milwaukee to organize the 1974 A.A.Z.K. Conference.

For the last couple of years many of the Keepers at Brookfield have participated in a Biology Discussion Group for Keepers. These optional meetings sponsored by management are held weekly during working hours and consist of an open-ended flexible series of lectures and discussions attempting to combine theoretical biology with a practical knowledge of zoo-keeping. Zoologist Robert Horwich, who organized the series, and the Curators at Brookfield have participated in leading many of these discussions. Also, Keepers have been encouraged to select topics and act as discussion leader.

In September of 1972 a group of Brookfield Zoo employees, spouses and retired employees formed the Brookfield Zoo Historical Society, which is a non-profit organization which strives to collect, catalog and preserve historic materials pertaining to Brookfield Zoo and to zoo-keeping in general. As far as we know this is the first organization of its kind in the world.

In addition to these activities that are more or less directly related to zoo-keeping, there are a number of other worthwhile activities. In July of 1972 a number of our employees formed the Salt Creek Sharpshooters Gun Club, whose primary aim is the promotion of skill and safety in the use of fire arms. A number of volunteers spent their own time evenings to build a shooting range for this purpose.

For several years the zoo has been represented by a Bowling Team; several softball teams have been formed by the several departments within the zoo, which

compete with each other; and recently a Credit Union was formed by the zoo employees.

This by no means exhausts the numerous activities that the Keepers at Brookfield have participated in, but should be sufficient to indicate the wide variety of possibilities that exist.

We are very interested in finding out what other chapters and individuals are doing. If you or your chapter are engaged in any activities let the editor of The Keeper know about them. We would like to hear from you, and our readers would be glad to share your experiences.



DATA POOL

Edited by
Pat Sammarco, Lincoln Park Zoo

With six Zoos replying, there is a good cross section of Elephant care, indicating particularly that there is no one way to care for an elephant. The Los Angeles Zoo has the most elephant with three Africans and four Asians; other Zoos replying they have one or two animals, divided equally between the two types. All the elephants here discussed are female. (I know through traveling that there are males of both types in Zoos, but these are not included here. An experience for any elephant enthusiast is to see K.C. the 22 year old male African at Kansas City Zoo perform.) The ages of these animals ranges from 2 to 53 years old.

Elephant housing includes a barn with chains for night restraint, except in the case of one baby who was never chained. Topeka included the advice of alternating the feet chained daily to prevent sores. Most Zoos chain two feet diagonally, i.e., left front/right rear or vice versa. All but one Zoo uses bedding at night, usually extra hay. Barns average 375 square feet of space per animal. (Wichita-Sedgwick County Zoo has one of the safest large animal buildings I have seen, with openings in the walls for Keepers to get away from the animals without worry of closing a door, and floors slanted towards openings leading to drains outside of the animal area).

Generally elephant are allowed outdoors for most of the day when temperatures are above 50 degrees and weather is fair. Two of the Zoos have chainlink enclosures, requiring a Keeper's presence when the elephants are out and therefore limiting the outside time available for the animals. Other Zoos have dry moats to effectively restrain elephants. 7300 square feet is the average area per elephant in an outdoor yard, including a 20 foot diameter pool in 50% of the Zoos. Yards vary considerably from nearly a half an acre of earth to 1800 sq. ft. of concrete with a sandbox. One yard has an asphalt area with a shower.

Diets seem to agree only in offering hay as free choice, but even the kind of hay differs. The elephant in each case eat approximately $\frac{1}{2}$ to $\frac{3}{4}$ of a bale of hay per day; the hay may be alfalfa, timothy, prairie hay, or brome hay. One Zoo feeds alfalfa at both feedings as long as the elephant can go outdoors, but when they stay in, the morning feeding becomes prairie hay. Other parts of the diets vary so much that I will list them rather than sort them out.

Two three year olds

$\frac{3}{4}$ bale alfalfa or prairie hay in A.M.
 $\frac{1}{2}$ - $\frac{3}{4}$ bale alfalfa
2 lb. 12% grain (each)
2 onions (each)
6 carrots (3 lb.) each in P.M.

Seven - 53 yrs.-7 yrs

3 bales of oat hay
100 lbs. carrots
150 lbs. herbivore pellets
banana peels from bird section

One 2 years

at 9 mos. (365 lb.)
5 times daily
4 oz. diet A-1 (pablum 62%, whole milk powder 35%, wheat germ meal 2%, Vionate 1%, 3oz. Karo syrup
3 medium bananas
 $\frac{1}{2}$ can condensed milk
water to make $\frac{1}{2}$ gal.
4 oz. rolled oats
4 oz. pablum
4 oz. raisins
all this is blended.

Two 11 yrs and 8 yrs

Constant supply of brome or prairie
3 loaves of bread
14 potatoes
7 carrots
5 apples

One 5 years

Constant access to hay
A.M. 6 lbs. Sox Blox
P.M. 6 lbs. Wayne-Schumacher feed pellet
daily supplements - 15 tablets
(10 gr. ea) calcium lactate,
2 oz Vionate-L, 3 grains Vita-day M (Wolins),
1 Tbsp. mineral salt, 1 Tbsp. Vionate.
4 capsules (25,000 u. each) Vitimin A weekly.

From 18 mos. on

3 times daily
4 qts. D & H chow
2 apples
2 oranges
3 bananas
2 large sweet potatoes
escarole - free choice
Timothy - free choice (Alfalfa is too rich)
Note: half the grain would probably be sufficient.

Received 6/15/72 - died - 12/3/73 : “--of gastritis, probably exant her whole period with us due to the stress of her confinement without conspecifics.”

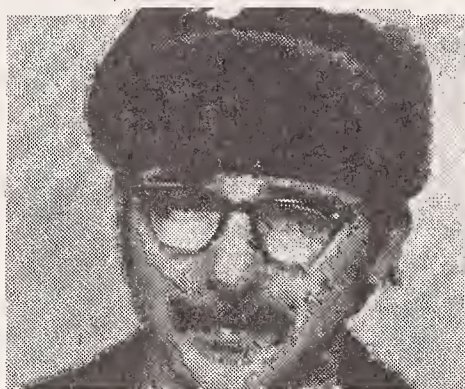
Elephant routines vary almost as widely as their diets. In some Zoos a young animal is trained to voice command just for handling, no circus tricks. Some elephants are trained to a regular, constant routine of leading, riding, lying down, standing steady, and using pedestals. Other animals are worked in a random routine with commands varied constantly. One elephant is walked in a field for an hour each day.

Maintenance in terms of foot care and skin care again run the gammit. One Zoo uses an asphalt pad in the yard to wear nails and pad naturally. Another Zoo only trims feet when problems force it. Regular trimming and cleaning of feet varies from three times a week to every two weeks.

Oiling raises controversy. One Zoo does not oil, stating that the oil leaves the pores open in the winter and can cause pneumonia; they bathe their elephant and scrub her three times a day in the summer, and every other day in the winter. Oiling intervals vary from once a month to twice a year. One Zoo gives mud baths when mud is available.

Suggested improvements include pairing up lone elephants, enlarging facilities and building better barriers, prohibiting feeding by the public, adding pools, adding manpower so the training sessions can become routine, and improving housing.

With so many variables in the care of elephants it seems that the one common factor is a hard working Keeper who is truly involved in giving his animals the best care possible.



BEHIND THE GUARDRAIL

Edited by
Larry Sammarco, Lincoln Park Zoo

Well, here we go into the new year with a lot of high expectations for the A.A.Z.K. I'm looking forward to the 1974 Convention and meeting a lot of my fellow A.A.Z.K. members and guests. This has all the indications of being a super convention. If you haven't sent in your registration yet don't hesitate a moment longer, or you'll let it slip by you before you realize.

NEWS FROM LINCOLN PARK

Births: We have two (2) proud papas at our zoo. Neil Martin's wife gave birth to a 6 lb. 11 oz. girl, and Art Maraldi's wife had a 6 lb. 9 oz. girl. Both mothers are

healthy and doing fine, as for the fathers they are doing as well as can be expected.

We also had two (2) white eared marmosets born; Brown Bear cubs (number and sex unknown); 0.2 Patagonian Cavies; and two (2) Hokaido bear cubs who unfortunately did not survive, but these were the first for our young pair so there are high hopes for the next offspring.

The Bird House received two (2) Red Crested Touracos to be displayed in the building. The Reptile House received four (4) Rhinoceros Vipers; one (1) Gaboon Viper; and four (4) Rhinoceros Iguanas.

The Lincoln Park Chapter is now putting out a monthly newsletter recounting the events of each month, with topics of interest for the Keepers. We've also established a Keeper library with up-to-date periodicals, books, and magazines pertaining to animals. The Keepers can come take advantage of this during their lunch break.

Please send any and all items of interest about your Zoo, Keepers, Staff and animals to me: Larry Sammarco, 5206 Ludlam, Chicago, Ill. 60630.

The A.A.Z.K. is in the process of establishing a Keeper Directory. Please fill out the form below and return to:

Ted Benzon
3185 E. Gregson Avenue
Salt Lake City, Utah 84109

DIRECTORY QUESTIONNAIRE:

Name _____ Position _____
Zoo _____ Address _____
Present area of work _____
Years of experience and education
(formal or technical) _____
Specialty _____
Interests _____

The Zoological Society of Philadelphia is organizing a "Centennial Symposium on Science and Research" in Philadelphia on November 12-14, 1974 to commemorate the 100th anniversary of the Philadelphia Zoological Garden.

The theme of the symposium is science and research in the zoological garden. The following topics will be covered: 1) research in the zoo, 2) contributions of the zoo to comparative medicine, 3) zoo animal medicine, and 4) the developing science of zoo management.

For further information, please contact Dr. Robert L. Snyder, Philadelphia Zoological Garden, 34th Street and Girard Avenue, Philadelphia, Pa. 19104

Why Be a Volunteer?

by Audrey Paul, Lincoln Park Zoo

Someone asked me a question the other day . . . “why in the world do you want to spend half of one of your two days off being a volunteer in Lincoln Park Zoo’s Nursery, especially when you have a full time job, your own apartment, etc.” . . . and I said, “because I want to.” “But WHY do you want to?”

Why? Because two years ago, the zoo keeper handed you a baby jaguar and you got a jaguar kiss. Because Stanley Bushdog always wanted to be held, you held him, and got thanked from both ends. Because there were big black leopards that scared you because you were new, and then came small, brand-new leopards that needed you to take care of them . . . and other jaguars, tigers, servals, monkeys, ant-eaters, armadillos, dingos, caracals, orangutangs, chimpanzees, pumas, and of course, our original pride and joy, the first gorilla born in our zoo.

Because they need to have clean cages, proper formulas, clean and sterilized bottles, sometimes diapers, sometimes help with shots, of course being fed, and, when we are allowed, mostly love.

Our nursery has two shifts for volunteers . . . the morning shift above and the afternoon shift, which in all honesty, gives a lot more time for playing, but for me, the morning shift always makes me feel like I’m able to contribute a little more to the “kids” welfare. Somehow, there is always time for playing in the morning, too.

Two years go by so quickly, but you remember them all . . . you remember their ways . . . like the time Sabtu Orangutang pulled off my hairpiece, held it gently, as she ran to the corner, and laughed most hysterically, in front of about fifty onlookers. Or when, Kumba Gorilla decided she did not care to wear her diapers anymore - what can be said? Stanley Bushdog’s show of love? Samson Armadillo’s insatiable desire for shoe laces? The Leopard’s (Nos. one, two, and three) playing scratches which seem to disappear immediately because you remember their gentle playing? Maude and Mitzi Caracal, who are, we were told, carnivorous and whom we watched most carefully, but the only thing they had to impart was kisses.

The few times you got scratched or bitten were always your own fault - who puts a big fat arm in front of a hungry puma? And, how mad could you get when he gazed lovingly into your eyes while he just held on?

You always have your favorites, I suppose, but I miss each of them when they

go . . . unfortunately, my favorites are always the ones that are there. You try not to show it - because you are only there to help raise them and not to fall in love with and want to kidnap them. They wouldn't even tell me how much of a check I'd have to leave in Fat Max Lion's cage if I ran away with him.

You wear your scrapbook out from looking at pictures, you hope they won't fire you, and have only one regret . . . you haven't been doing this for twenty-two years instead of two!

I guess I want to be a volunteer because I love animals . . . and people who love animals, and where else could I be so happy than at the nursery? You have great bosses, great co-workers and all them fuzzy little babies . . . and people have the nerve to ask WHY?

Monkey House

by Pat Sass, Lincoln Park Zoo

Even though I had been at the Zoo for 11 years; I was still not a Keeper. Women were not allowed to work in any building but the Children's Zoo as Zoo Leaders.

At last, 1½ years ago, I took a Civil Service Exam and became a Keeper. For eight months, I stayed in the Children's Zoo as a Keeper; but in December, I was transferred to the Monkey House.

When I was first told of the transfer, I had mixed feelings. Eleven years is a long time. But since chimps are my thing, I was ready for the move. Of course, I was scared. No woman had ever worked in the building before. Would the guys accept me: Could I handle the work? What about the animals—especially the Great Apes?

In the middle of all this, I received a package from my friend, Judy Harris, who was a Keeper at the Indianapolis, Indiana Zoo. Inside was a silver shovel with a pretty blue bow and the following letter:

Dear Pat:

Congratulations! You have just entered the "Wonderful World of Washdowns and Shovel-ups", as symbolized by this, the Silver Shovel Award. You are now eligible to receive, absolutely free-of-charge, all the duiker dung and bird turd you can shovel (all guaranteed to be organically grown—no manmade facsimiles). Also, guaranteed, is prompt and automatic elbow room and seating on any bus in town immediately after work.

Please note that you are now eligible for admission into that even

more select group, "The Mini-Keeper Mob", open to 'keeps' 5'3" or under. Your mini-keep catalog, to be found in all locations "lower than an ant's eyeball" includes such marvelous aids as the step ladder and roller skate combination for chasing down and collaring tall monkeys. Remember, the ability to walk unbending under the pipes and cupboards doors is well worth the minor inconveniences (the inability to reach most emergency levers and weight systems) of being a mini-keeper.

The best of luck in your new capacity.

Judy

P.S. If placed in the Reptile Department, bear in mind the words of the prophet Mon-goose: "Cobra speak with forked tongue" (and that goes for all their kind).

J.H..

WITH FRIENDS LIKE THAT, WHAT IS THERE TO WORRY ABOUT.....



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ZOO REVIEW

By Pat Stout, Associate Editor

Many state conservation departments publish magazines containing useful information. Here are three of the best.

Texas Parks & Wildlife published monthly by the Texas Parks and Wildlife Department, John H. Reagan Bldg., Austin, Texas 78701. Subscription rates \$3.15 for one year and \$5.25 for two years.

Montana Outdoors published bi-monthly by the Montana Department of Fish and Game, 125 Roberts, Helena, Montana 59601. Subscription rates are \$2.00 for one year.

The Conservationist published bi-monthly by the New York State Dept. of Environmental Conservation. Available from: The Conservationist, Box 2328 Grand Central Station, New York, New York 10017. Subscriptions \$2.00 for one year or \$5.00 for three years.

23-DAY KEEPER SAFARI TO AFRICA

Join others with the same interest on a fantastic photographic safari. You will be guided by a professional hunter with 40 years experience. Your guide from Chicago will be Di Asch, organizer and veteran of five safaris. Your cost will be \$2,650; all inclusive, except for souvenirs, booze and film. You will live in the bush in tents, have home cooked meals and all your clothes will be washed and ironed for you. This will be a relaxed, fun-filled, educational trip of a lifetime—you need not lift a finger except to press the lever on your camera.

The safari will leave Chicago on January 31, 1975, and we will fly B.O.A.C. to Nairobi. We will be gone approximately 23 days and 19 of them will be spent in the bush, observing many of the same animals currently under your care.

For details and additional information, please contact Di Asch, 9441 S. Longwood Drive, Chicago, Illinois 60620.

Brookfield

Lincoln Park

Milwaukee

**1974
AAZK
NATIONAL
CONVENTION**

Something new for 1974, Three zoo hosts will have the pleasure of showing you around. Spend a day at Brookfield Zoo with host Dewey Garvey, Milwaukee Zoo with host Sam LaMalfa, Lincoln Park Zoo with hostess Pat Sass.

Convention Dates: April 22-25

Hotel Headquarters: Sheraton-Chicago, Chicago, Illinois.

Rates are: Single, \$20.00; twin-double, \$26.00; triple, \$31.00; one bedroom suite, \$40.00 and \$5.00 per additional cot.

If you would like to present a paper or other type of program at Chicago, please contact Dennis Grimm, 204 Olmstead Road, Riverside, Illinois 60546.

Besides representing your zoo by attending, plan to have a picture poster of your zoo, to hang in the session room.

Hope to see you at the convention. Watch THE KEEPER for more details and information — 3 and more in '74.

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